



PTO/SB/08A (10-01)
 Approved for use through 10/31/2002. OMB 0651-0031
 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Complete if Known		
	Application Number	09/886,954			
	Filing Date	June 21, 2001			
	First Named Inventor	Maureen J. Charron			
	Art Unit	1636			
	Examiner Name	S. Kaushal, Ph.D.			
Sheet	1	of	6	Attorney Docket Number	96700/667

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

RECEIVED
 NOV 05 2002
 TECH CENTER 1600/2900

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴ - Kind Code ⁵ (if known)				

Examiner Signature	Date Considered
---------------------------	------------------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.
 Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	09/886,954
		Filing Date	June 21, 2001
		First Named Inventor	Maureen J. Charron
		Group Art Unit	1636
		Examiner Name	S. Kaushal, Ph.D.
		Attorney Docket Number	96700/667
Sheet	2	of	6

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ²	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
	1	AUSUBEL et al., Short Protocols in Molecular Biology, Third Edition, pp. 16-3 - 16-5, 16-58 - 16-62, 1995	
	2	BRUNING, et al., A muscle-specific insulin receptor knockout exhibits features of the metabolic syndrome of NIDDM without altering glucose tolerance. Mol Cell, 2:559-69, 1998	
	3	CALDERHEAD et al., Insulin regulation of the two glucose transporters in 3T3-L1 adipocytes. J Biol Chem, 265:13800-08, 1990	
	4	CARTEE, et al., Stimulation of glucose transport in skeletal muscle by hypoxia. J Appl Physiol, 70:1593-1600, 1991	
	5	CHAN and EXTON, A rapid method of the determination of glycogen content and radioactivity in small quantities of tissue or isolated hepatocytes. Anal Biochem, 71:96-105, 1976	
	6	CHANG, et al., Overexpression of hexokinase II in transgenic mice. J Biol Chem, 271:14834-39, 1996	
	7	CUSHMAN and SALANS, Determinations of adipose cell size and number in suspensions of isolated rat and human adipose cells. J Lipid Res, 19:269-73, 1978	
	8	DEVASKAR and MUECKLER, The mammalian glucose transporters. Pediatr Res, 31:1-13, 1992	
	9	DOEGE et al., GLUT8, a novel member of the sugar transport facilitator family with glucose transport activity. J Biol Chem, 275:16275-80, 2000	
	10	DOUEN et al., Exercise Induces Recruitment of the "Insulin-responsive glucose transporter. J Biol Chem, 265:13427-30, 1990	
	11	FOLEY, Rationale and application of fatty acid oxidation inhibitors in treatment of diabetes mellitus. Diabetes Care, 15:773-84, 1992	

TECH CENTER 1600/2900

RECEIVED
NOV 05 2002

Examiner Signature		Date Considered	1/8/03
--------------------	--	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO		C mplet if Kn wn	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	09/886,954
		Filing Date	June 21, 2001
		First Named Inventor	Maureen J. Charron
		Group Art Unit	1636
		Examiner Name	S. Kaushal, Ph.D.
		Attorney Docket Number	96700/667
Sheet	3	of	6

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
	12	FROEHNER et al., The blood-nerve barrier is rich in glucose transporter. J Neurocytol, 17:173-178, 1988	
	13	GARCIA DE HERREROS and BIRNBAUM, The acquisition of increased insulin-responsive hexose transport in 3T3- L1 adipocytes correlates with expression of a novel transporter gene. J Biol Chem, 264:19994-99, 1989	
	14	GUMÁ et al., Insulin induces translocation of GLUT-4 glucose transporters in human skeletal muscle. Am J Physiol, 268:E613-E622, 1995	
	15	HANSEN, et al., Suitability of 2-deoxyglucose for in vitro measurement of glucose transport activity in skeletal muscle. J Appl Physiol, 76:979-85, 1994	
	16	HELLWIG, et al., Localization of the binding domain of the inhibitory ligand forskolin in the glucose transporter GLUT-4 by photolabeling, proteolytic cleavage and a site-specific antiserum. Biochim Biophys Acta, 1111:178-84, 1992	
	17	HEYDRICK, et al., Early alteration of insulin stimulation of PI 3-kinase in muscle and adipocyte from gold thioglucose obese mice. Am J Physiol, 268:E604-12, 1995	
	18	HIRSHMAN et al., Identification of an intracellular pool of glucose transporters from basal and insulin-stimulated rat skeletal muscle. J Biol Chem, 265:987-91, 1990	
	19	HOLLOSZY and BOOTH, Biochemical Adaptions to endurance exercise in muscle. Annu Rev Physiol, 38:273-91, 1976	
	20	HOLMAN, et al., Cell surface labeling of glucose transporter isoform GLUT4 by bis-mannose photolabel. J Biol Chem, 265:18172-79, 1990	
	21	HURLEY et al., Muscle triglyceride utilization during exercise: effect of training. J Appl Physiol, 60:562-67, 1986	
	22	IBBERSON et al., GLUTX1, a novel mammalian glucose transporter expressed in central nervous system and insulin-sensitive tissues. The Journal of Biological Chemistry, 275:4607-12, 2000	

TECH CENTER 1600/2900

RECEIVED
NOV 05 2002

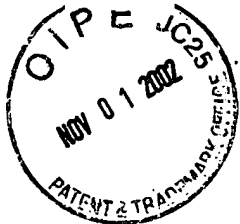
Examiner Signature		Date Considered	1/8/03
--------------------	--	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.





PTO/SB/08B (10-01)
 Approved for use through 10/31/2002. OMB 0651-0031
 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	09/886,954
		Filing Date	June 21, 2001
		First Named Inventor	Maureen J. Charron
		Group Art Unit	1636
		Examiner Name	S. Kaushal, Ph.D.
		Attorney Docket Number	96700/667
Sheet	4	of	6

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
<i>au</i> ↓	23	JENKINS et al., Effects of nonesterified fatty acid availability on tissue-specific glucose utilization in rats in vivo. J Clin Invest., 82:293-99, 1988	
	24	JOOST et al., Structure-function relationship of glucose transporters catalyzing facilitated diffusion. Exp Clin Endocrinol, 102:434-38, 1994	
	25	KAHN, Glucose transport: pivotal step in insulin action. Diabetes, 45:1644-54, 1996.	
	26	KAMOHARA et al. Acute stimulation of glucose metabolism in mice by leptin treatment. Nature, 389:374-77, 1997	
	27	KATZ, et al., Cardiac and adipose tissue abnormalities but not diabetes in mice deficient in GLUT4. Nature, 377:151-55, 1995	
	28	KLIP et al., Insulin-induced translocation of glucose transporters in rat hindlimb muscles. FEBS letters, 224:224-30, 1987	
	29	LEE et al., Comparative expressed-sequence-tag analysis of differential gene expression profiles in PC-12 cells before and after nerve growth factor treatment. Proc. Natl. Acad. Sci USA, 92:8303-07, 1995	
	30	MASSILLON et al., Quantitation of hepatic glucose fluxes and pathways of hepatic glycogen synthesis in conscious mice. Am J Physiol, 269:E1037-E1043, 1995	
	31	MURAKAMI et al., Enzymatic and genetic adaption of soleus muscle mitochondria to physical training in rats. Am J Physiol, 267:E388-E395, 1994	
	32	NAKATANI et al., Effect of endurance exercise training on muscle glycogen supercompensation in rats. J Appl Physiol, 82:711-15, 1997	
	33	OAKES et al., A new antidiabetic agent, BRL 49653, reduces lipid availability and improves insulin action and glucoregulation in the rat. Diabetes, 43:1203-10, 1994	

TECH CENTER 1000/2900

NOV 05 2002

RECEIVED

Examiner Signature	<i>Garfield</i>	Date Considered	1/9/03
--------------------	-----------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08B (10-01)
 Approved for use through 10/31/2002. OMB 0651-0031
 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	09/886,954
		Filing Date	June 21, 2001
		First Named Inventor	Maureen J. Charron
		Group Art Unit	1636
		Examiner Name	S. Kaushal, Ph.D.
		Attorney Docket Number	96700/667
Sheet	5	of	6

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
m ↓	34	OKUNO et al., Acute effect of troglitazone on glucose metabolism in the absence or presence of insulin in perfused rat hindlimb. <i>Metabolism</i> , 46:716-21, 1997	
	35	OLSON and PESSIN, Structure, function, and regulation of the mammalian facilitative glucose transporter gene family. <i>Annu Rev Nutr</i> , 16:235-56, 1996	
	36	OZCAN et al., Two glucose transporters in <i>Saccharomyces cerevisiae</i> are glucose sensors that generate a signal for induction of gene expression. <i>Proc Natl Acad Sci U S A</i> , 93:12428-32, 1996	
	37	OZCAN et al., Glucose sensing and signaling by two glucose receptors in the yeast <i>Saccharomyces cerevisiae</i> , <i>EMBO J</i> , 17:2566-73, 1998	
	38	POSTIC et al., The effects of hyperinsulinemia and hyperglycemia on GLUT4 and hexokinase II mRNA and protein in rat skeletal muscle and adipose tissue. <i>Diabetes</i> , 42:922-929, 1993	
	39	RANDLE et al., The glucose fatty-acid cycle its role in insulin sensitivity and the metabolic disturbances of diabetes mellitus. <i>Lancet</i> , 1:785-89, 1963	
	40	ROMIJN et al., Regulation of endogenous fat and carbohydrate metabolism in relation to exercise intensity and duration. <i>Am J Physiol</i> , 265:E380-91, 1993	
	41	SCHURMANN et al., Glucose transport activity and photolabeling with 3-[125I]iodo-4-azidophenethylamido-7-0-succinyldeacetyl (IAPS)-forskolin of two mutants at tryptophan-388 and -412 of the glucose transporter GLUT1: dissociation of the binding domains of forskolin and glucose. <i>Biochem J</i> , 290:497-501, 1993	
	42	SHEPHERD et al., Adipose cell hyperplasia and enhanced glucose disposal in transgenic mice overexpressing GLUT4 selectively in adipose tissue. <i>J Biol Chem</i> , 268:22243-46, 1993	
	43	STENBIT et al., Diverse effects of GLUT4 ablation on glucose uptake and glycogen synthesis in red and white skeletal muscle. <i>J Clin Invest</i> , 98:629-34, 1996	
44	STENBIT et al., GLUT4 heterozygous knockout mice develop muscle insulin resistance and diabetes. <i>Nature Med</i> , 3:1096-1101, 1997		

TECH CENTER 1600/2900

RECEIVED
NOV 05 2002

Examiner Signature		Date Considered	1/8/03
--------------------	--	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08B (10-01)
 Approved for use through 10/31/2002. OMB 0651-0031
 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
 Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO		Compleat if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/886,954
		Filing Date	June 21, 2001
		First Named Inventor	Maureen J. Charron
		Group Art Unit	1636
		Examiner Name	S. Kaushal, Ph.D.
		Attorney Docket Number	96700/667
Sheet	6	of	6

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ²	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published	T ²
W	45	TSAO et al., Enhanced insulin action due to targeted GLUT4 overexpression exclusively in muscle. Diabetes, 45:28-36, 1996	
	46	TSAO et al., Muscle-specific transgenic complementation of GLUT4-deficient mice. J Clin Invest, 100: 671-677, 1997	
	47	WIBOM et al., Adaption of mitochondrial ATP production in human skeletal muscle to endurance training and detraining. J Appl Physiol, 73:2004-10, 1992	
	48	WILSON et al., Regulation of cell surface GLUT1, GLUT3, and GLUT4 by insulin and IGF-I in L6 myotubes. FEBS Lett, 368:19-22, 1995	
	49	ZIERATH et al., Restoration of hypoxia-stimulated glucose uptake in GLUT4-deficient muscles by muscle-specific GLUT4 transgenic complementation. J Biol Chem, 273:20910-15, 1998	
	50	ZORZANO et al., Insulin-regulated glucose uptake in rat adipocytes is mediated by two transporter isoforms present in at least two vesicle populations. J Biol Chem 264:12358-63, 1989	
W	51	REAGAN et al., Localization and regulation of GLUTx1 glucose transporter in the hippocampus of streptozotocin diabetic rats. PNAS, 98: 2820-2825, 2001	

TECH CENTER 1600/2900

RECEIVED
NOV 05 2002

Examiner Signature	<i>S. Kaushal</i>	Date Considered	1/8/03
--------------------	-------------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

